

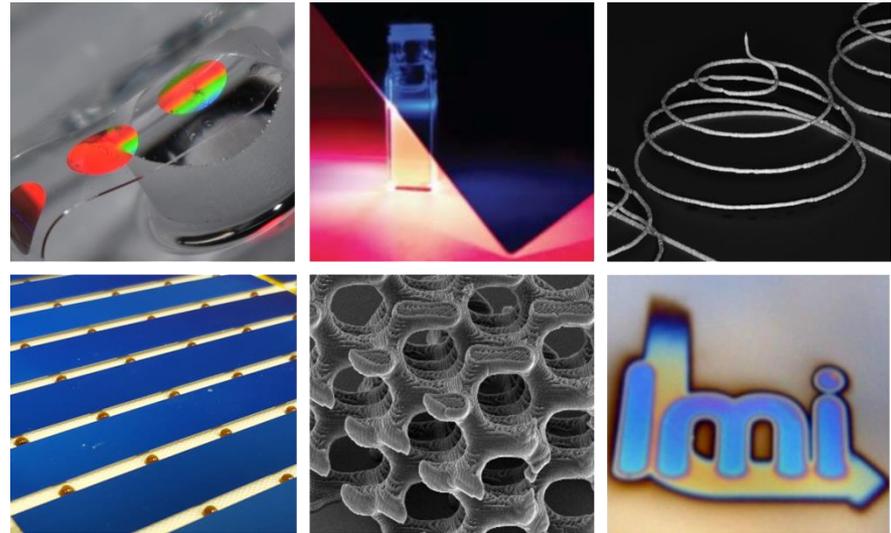
# Light-Material Interactions in Energy Conversion (LMI)

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**LMI-EFRC:** a national resource for fundamental optical principles and design for solar energy conversion.

**Goal:** to tailor the morphology, complex dielectric structure, and electronic properties of matter so as to sculpt the flow of sunlight and heat, enabling light conversion to electrical energy with unprecedented efficiency.

<http://lmi.caltech.edu>



## RESEARCH PLAN

**Challenge:** Solar energy conversion that effectively utilizes the entire solar spectrum. **Approach:** Photonic design combining fundamental limits to solar conversion efficiency, spectrum splitting and control, broad angle light capture and concentration, and thermal photonics. **Outcome:** Photonic principles that enable record photovoltaic conversion efficiency and utilization of the entire visible and infrared solar resource.



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